

Interview Summary

Application No.

10/774,168

Applicant(s)

PEREIRA, JOSE P.

Examiner

B. James Peikari

Art Unit

2189

All participants (applicant, applicant's representative, PTO personnel):

(1) B. James Peikari (USPTO). (3) _____

(2) William L. Paradise III (#38,990). (4) _____

Date of Interview: 23 May 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____

Claim(s) discussed: 1-30.

Identification of prior art discussed: Pereira and Kaganoi et al.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant and the examiner discussed the claims and disclosure of the invention and determined language that would overcome the rejections and put the application in condition for allowance. Applicant will fax a copy of the agreed-upon claim language to the examiner. The examiner will attach the faxed copy to an examiner's amendment.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

B/P

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REQUESTED BY EXAMINER

SHEMWELL/MAHAMED I

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CONF. NO.: 7294IN THE UNITED STATES PATENT OFFICE

Applicant: Jose P. Pereira
Assignee: NetLogic Microsystems, Inc.
Title (amended): "Content Based Content Addressable Memory Block Enabling
Using Search Key"
Ser. No.: 10/774,168 Filing Date: 02/06/2004
Examiner: Behzad Peikari Art Unit: 2819
Docket No.: NLMI.P206 Conf. No.: 7294

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P.O Box 1450
Alexandria, VA 22313-1450

May 23, 2007

SUPPLEMENTAL AMENDMENT AFTER FINAL REJECTION

Dear Sir:

This paper is in further response to the Final Office Action mailed from the
Patent Office on April 11, 2007.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 7 of this paper.

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IN THE CLAIMS

1. (Currently Amended) A content addressable memory (CAM) device for comparing a search key to data values stored therein, comprising:

a plurality of CAM blocks, each including an array of CAM cells to store a predetermined range of data values;

means for extracting a selected portion of the search key in response to a select signal, wherein the selected portion of the search key is less than the search key; and

means for selectively enabling each CAM block in response to a comparison between the selected portion of the search key and the predetermined range of data values that are stored in the corresponding CAM block, wherein only the selectively enabled CAM blocks participate in the next compare operation with the search key.

2. (Original) The CAM device of Claim 1, wherein the means for extracting comprises a parsing circuit.

3. (Original) The CAM device of Claim 1, wherein the data values comprise network addresses.

4. (Original) The CAM device of Claim 1, wherein each CAM block is assigned to store a unique range of data values.

5. (Original) The CAM device of Claim 1, wherein one or more CAM blocks are assigned to store overlapping ranges of data values.

6. (Original) The CAM device of Claim 1, wherein the selected portion of the search key comprises a number of most significant bits of the search key.

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7. (Original) The CAM device of Claim 1, wherein each data value has an associated priority value.

8. (Previously Presented) The CAM device of Claim 1, wherein the means for selectively enabling comprises a plurality of block select circuits, each configured to enable a corresponding CAM block if the selected portion of the search key falls within the predetermined range of data values stored in the corresponding CAM block.

9. (Original) The CAM device of Claim 8, wherein the block select circuit includes a function generator.

10. (Original) The CAM device of Claim 9, wherein the function generator performs a hashing function on the selected portion of the search key.

11. (Original) The CAM device of Claim 8, wherein each block select circuit disables the corresponding CAM block if the selected portion of the search key does not fall within the predetermined range of data values stored in the corresponding CAM block.

12. (Currently Amended) A content addressable memory (CAM) device for comparing a search key to data stored therein, comprising:

a plurality of CAM blocks, each including an array of CAM cells to store a predetermined range of data values;

a parsing circuit having an input to receive the search key and having an output to provide a selected portion of the search key in response to a select signal, wherein the selected portion of the search key is less than the search key; and

a plurality of block select circuits, each configured to enable a corresponding CAM block for the next compare operation with the search key if the selected portion of the search key falls within the predetermined range of data values that are stored in the corresponding CAM block.

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13. (Original) The CAM device of Claim 12, wherein each block select circuit comprises:

a storage element to store a lower range value and an upper range value for the corresponding CAM block; and

a compare circuit having a first input to receive the selected portion of the search key, second inputs to receive the lower and upper range values, and an output to generate a block select signal for the corresponding CAM block.

14. (Original) The CAM device of Claim 13, wherein the compare circuit asserts the block select signal if the selected portion of the search key is greater than the lower range value and less than the upper range value for the corresponding CAM block.

15. (Original) The CAM device of Claim 13, wherein the compare circuit de-asserts the block select signal if the selected portion of the search key is less than the lower range value or greater than the upper range value for the corresponding CAM block.

16. (Original) The CAM device of Claim 13, wherein each block select circuit further comprises a function generator having an input to receive the selected portion of the search key and having an output connected to the first input of the compare circuit.

17. (Original) The CAM device of Claim 16, wherein the function generator performs a logical function on the selected portion of the search key.

18. (Original) The CAM device of Claim 17, wherein the logical function comprises a hashing function.

19. (Original) The CAM device of Claim 12, wherein the data values

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comprise network addresses.

20. (Original) The CAM device of Claim 12, wherein each CAM block is assigned to store a unique range of data values.

21. (Original) The CAM device of Claim 12, wherein one or more CAM blocks are assigned to store overlapping ranges of data values.

22. (Original) The CAM device of Claim 12, wherein the selected portion of the search key comprises a number of most significant bits of the search key.

23. (Original) The CAM device of Claim 12, wherein each data value has an associated priority value.

24. (Currently Amended) A method of operating a content addressable memory (CAM) device including a plurality of CAM blocks each for storing a predetermined range of data values to be compared with a search key, comprising:

extracting a selected portion of the search key in response to a select signal, wherein the selected portion of the search key is less than the search key; and for each CAM block,

determining whether the selected portion of the search key falls within the predetermined range of data values stored in the CAM block; and

selectively enabling the CAM block₁ in response to the determining, to participate in the next compare operation with the search key.

25. (Previously Presented) The method of Claim 24, wherein the determining comprises:

comparing the selected portion of the search key with lower and upper range values associated with the predetermined range of data values stored in the CAM block.

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26. (Original) The method of Claim 25, wherein the selectively enabling comprises:

generating a plurality of block enable signals in response to the comparing.

27. (Original) The method of Claim 25, further comprising:
storing the data values into the CAM blocks according to their predetermined ranges.

28. (Original) The method of Claim 24, further comprising:
performing a logical function on the selected portion of the search key.

29. (Currently Amended) A method of selectively enabling a plurality of CAM blocks each for storing a predetermined range of data values, comprising:

extracting a selected portion of a search key in response to a select signal,
wherein the selected portion of the search key is less than the search key;

for each CAM block, determining whether the selected portion of the search key falls within the predetermined range of data values that are stored in the corresponding CAM block; and

generating a plurality of block enable signals, in response to the determining,
for selectively enabling the CAM blocks to participate in the next compare operation with the search key.

30. (Original) The method of Claim 29, wherein the determining comprises:

comparing the selected portion of the search key to a lower range value and an upper range value associated with each of the plurality of CAM blocks.

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REMARKS

Claims 1-30 are pending and are rejected. Claims 1, 12, 24, and 29 are amended. Reconsideration and allowance of Claims 1-30 are respectfully requested.

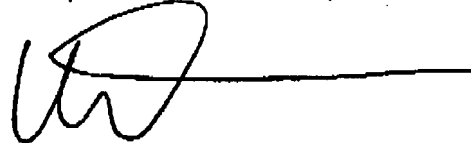
Examiner Interview

Applicant thanks the Examiner for the Interview with the undersigned on May 23, 2007.

CONCLUSION

In light of the above remarks, it is believed that Claims 1-30 are in condition for allowance and, therefore, a Notice of Allowance of 1-30 is respectfully requested. If the Examiner's next action is other than allowance as requested, the Examiner is requested to call the undersigned at (408) 236-6646.

Respectfully submitted,



William L. Paradice III
Attorney for Applicants
Reg. No. 38,990

May 23, 2007